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# THE AMERICAN MATHEMATICAL MONTHLY.

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## BIOGRAPHY.

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ARTEMAS MARTIN, M. A., PH. D., LL. D.

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BY B. F. FINKEL.

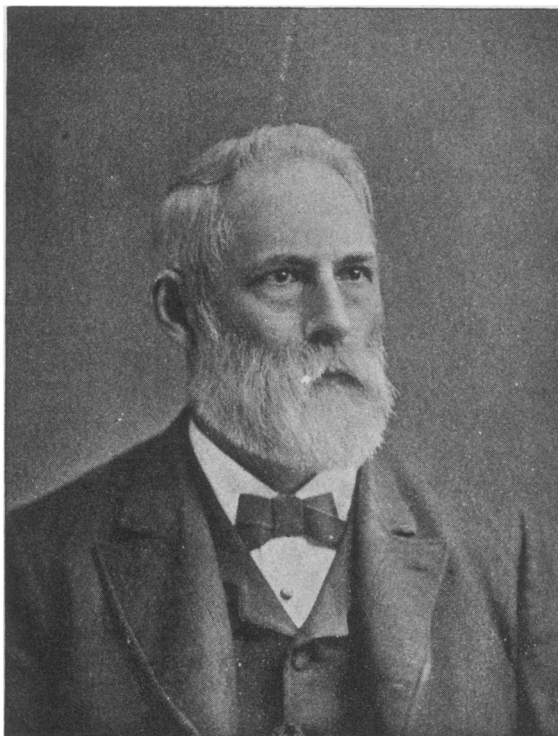
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The subject of this sketch was born in Steuben county, N. Y., August 3, 1835. Early, his parents moved to Venango county, Pa., where they lived for many years. Dr. Martin had no schooling in his early boyhood, except a little primary instruction; but by self-application and indefatigable energy which have told the story of many a great man, he has become familiar to every mathematician and lover of science in every civilized country of the world.

He was never a pupil at school, except when quite small, until in his fourteenth year. He had learned to read and write at home, but knew nothing of Arithmetic. At fourteen he commenced the study of Arithmetic, and after spending two winters in the district school, he commenced the study of Algebra. At seventeen, he studied Algebra, Geometry, Natural Philosophy, and Chemistry in the Franklin Select School, walking two and one-half miles night and morning. Three years after, he spent two and one-half months in the Franklin Academy, studying Algebra and Trigonometry. This finished his schooling. He taught district schools four winters, but not in succession. He was raised on a farm, and worked at farming and gardening in the summer; chopped wood in the winter; and after the discovery of oil in Venango county, worked at drilling oil wells a part of his time, always devoting his "spare moments" to study.

In the spring of 1869, the family moved to Erie county, Pa., where he resided until he entered the U. S. Coast Survey Office in 1885. While in Erie county, after 1871, he was engaged in market-gardening, which he carried on with great care and skill. He began his mathematical career when in his eighteenth year, by contributing solutions to the *Pittsburg Almanac*, soon after contributing problems to the "Riddler Column" of the *Philadelphia Saturday Evening Post*, and was one of the leading contributors for twenty years.

In the summer of 1864 he commenced contributing problems and solu-



ARTEMAS MARTIN, A. M., PH. D., LL. D.

tions to *Clark's School Visitor*, afterward the *Schoolday Magazine*, published in Philadelphia. In June, 1870, he took charge of the "Stairway Department" as editor, the mathematical department of which he had conducted for some years before. He continued in charge as mathematical editor till the magazine was sold to Scribner & Co., in the spring of 1875, at which time it was merged into "*St. Nicholas*."

In September, 1875, he was chosen editor of a department of higher mathematics in the *Normal Monthly*, published by Professor Edward Brooks, Millersville, Pennsylvania, and held that position till the *Monthly* was discontinued in August, 1876. He published in the *Normal Monthly*, a series of sixteen articles on the Diophantine Analysis.

In June, 1877, Yale College conferred on him the honorary degree of Master of Arts (M. A.). In April, 1878, he was elected member of the London Mathematical Society. In June, 1882, Rutgers College conferred on him the honorary degree of Doctor of Philosophy (Ph.D.). March 7, 1884, he was elected a member of the Mathematical Society of France. In April, 1885, he was elected a member of the Edinburgh Mathematical Society. June 10, 1885, Hillsdale College conferred on him the honorary degree of Doctor of Laws (LL. D.). February 27, 1886, he was elected a member of the Philosophical Society of Washington. In June, 1881, he was elected Professor of Mathematics of the Normal School at Warrensburg, Missouri, but did not accept the position. November 14, 1885, Dr. Martin was appointed Librarian in the office of the U. S. Coast and Geodetic Survey. On August 27, 1889, he was elected a member, and on August 26, 1890, he was elected a Fellow of the American Association for the Advancement of Science. On April 3, 1891, he was elected a member of the New York Mathematical Society.

All these honors have been worthily bestowed and the Colleges and Societies conferring them have done honor to themselves in recognizing the merits of one who has become such a power in the scientific world through his own efforts.

He has contributed fine problems and solutions to the following journals of the United States: *School Visitor*, *Analyst*, *Annals of Mathematics*, *Mathematical Monthly*, *Illinois Teacher*, *Inca Instructor*, *National Educator*, *Yates County Chronicle*, *Barnes' Educational Monthly*, *Wittenberger*, *Maine Farmers' Almanac*, *Mathematical Messenger*, and *Educational Notes and Queries*. Besides other contributions, he contributed thirteen articles on "Average" to the Mathematical Department of the *Wittenberger*, edited by Professor William Hoover. These are believed to be the first articles published on that subject in America.

Dr. Martin has also contributed to the following English mathematical periodicals: *Lady's and Gentleman's Diary*, *Messenger of Mathematics*, *Quarterly Journal of Mathematics*, and *The Educational Times and Reprint*.

The *Reprint* contains a large number of his solutions to difficult "Average" and "Probability" problems, which are master-pieces of mathemat-

cal thought and skill, and they will be lasting monuments to his memory. His style is direct, clear, and elegant. His solutions are neat, accurate, and simple. He has that rare and happy faculty of presenting his solutions in the simplest mathematical language, so that those who have mastered the elements of the various branches of mathematics, are able to understand his reasoning.

Dr. Martin is now (1894) editor of the *Mathematical Magazine*, and the *Mathematical Visitor*, two of the best mathematical periodicals published in America. These are handsomely arranged and profusely illustrated with very beautiful diagrams to the solutions, he doing the typesetting with his own hand. The typographical work of these journals is said to be the finest in America. The best mathematicians from all over the world contribute to these two journals. The *Mathematical Visitor* is devoted to Higher Mathematics, while the *Mathematical Magazine* is devoted to the solutions of problems of a more elementary nature. All solutions sent to Dr. Martin receive due credit, and, if it is possible to find room for them, the solutions are all published. He has thus encouraged many young aspirants to higher fields of mental activity. He is always ready to aid any one who is laboring to bring success with his work. He is of a kind and noble disposition and his generous nature is in full sympathy with every diligent student who is rising to planes of honor and distinction by self application and against adverse circumstances.

Dr. Martin has a large and valuable mathematical library containing many rare and interesting works. His collection of American arithmetics and algebras is one of the largest private collections of the kind in this country. He has also a large collection of foreign arithmetics and algebras; a large collection of grammars of the English language, mostly American; and a large collection of miscellaneous works, including botany, natural history, biography, poetry, American dictionaries, &c., and many curious books.

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## LOGARITHMS OF NEGATIVE NUMBERS.

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By M. C. STEVENS, Professor of Higher Mathematics, Perdue University, Lafayette, Indiana.

On page 28, of B. O. Peirce's "Short Table of Integrals" is the following:— $\text{Log}(-u) = \log u + \text{a constant}$ . From the ordinary treatises on logarithms we learn that all possible numbers from  $-\infty$  to  $+\infty$  are required to express the logarithms of numbers from 0 to  $+\infty$ . The thoughtful student will therefore enquire, what is the nature of the constant which is added to the ordinary logarithm of  $u$  to give the  $\log(-u)$ . The following explanation, although it is not new, may be interesting to some of the readers of the MONTHLY. I therefore submit it.

It is shown in many treatises on Higher Algebra, (See Wentworth's